



Syntactic weight and the dative alternation in 20th century British and American English

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Outline

1. Introduction
2. Previous approaches
3. Data
4. Methodology
5. Results
6. Conclusion & Outlook

I. Introduction

- Aims and objectives:

“With its focus on the **dative alternation**, this study looks into the regional and temporal differences in the use of the dative alternation and possible changes with regard to the impact of **syntactic weight** as one determining factor .“

I. Introduction

- What is the dative alternation (DA)?

The double-object construction

I	gave	Mary	the book.
		recipient	theme

The prepositional dative construction

I	gave	the book	to Mary.
		theme	recipient

I. Introduction

- A word on terminology...
 - Is it or is it not *an alternation*?
 - semantic equivalence?
 - lexical semantic differences?
 - lexical equivalence and constructional semantic differences?
 - multiple variables contribute to the speaker's choice (see Bresnan et al. 2007)

I. Introduction

- Parameters: Syntactic weight
 - 1) Stories like these must **give the creeps to people** whose idea of heaven is a world without religion
 - 2) *Stories like these must **give people** whose idea of heaven is a world without religion **the creeps**.

I. Introduction

- Aims and objectives:

“With its focus on the dative alternation, this study looks into the regional and temporal differences in the use of the dative alternation and possible changes with regard to the impact of syntactic weight as one determining factor .“

2. Previous research

- Bresnan et al. (2007):
 - predicting the dative alternation with a probabilistic model (94% accuracy)
- Lehmann and Schneider (2010)
 - fully automatic analysis on parsed data
 - all verbs to allow for alternation in parsing
 - observation of rare verbs occurring in alternation
 - Data: ca. 580 Mio words (News)

2. Previous research

- Bresnan and Hay (2008)
 - *give* in NZE and AmE
 - difference in effect of animacy
- Bresnan and Nikitina (2009)
 - mapping of verbs to dative construction
 - polysemous verbs with recipients can occur in both constructions
- etc.

2. Previous research

- Grimm and Bresnan (2009)
 - Brown-Frown/LOB-FLOB
 - Factors: thematicity, length of arguments, persistence and pronominality (automatic annotation)
 - changes are not reflection of a particular text type
 - increased preference for double-object constructions

3. Data

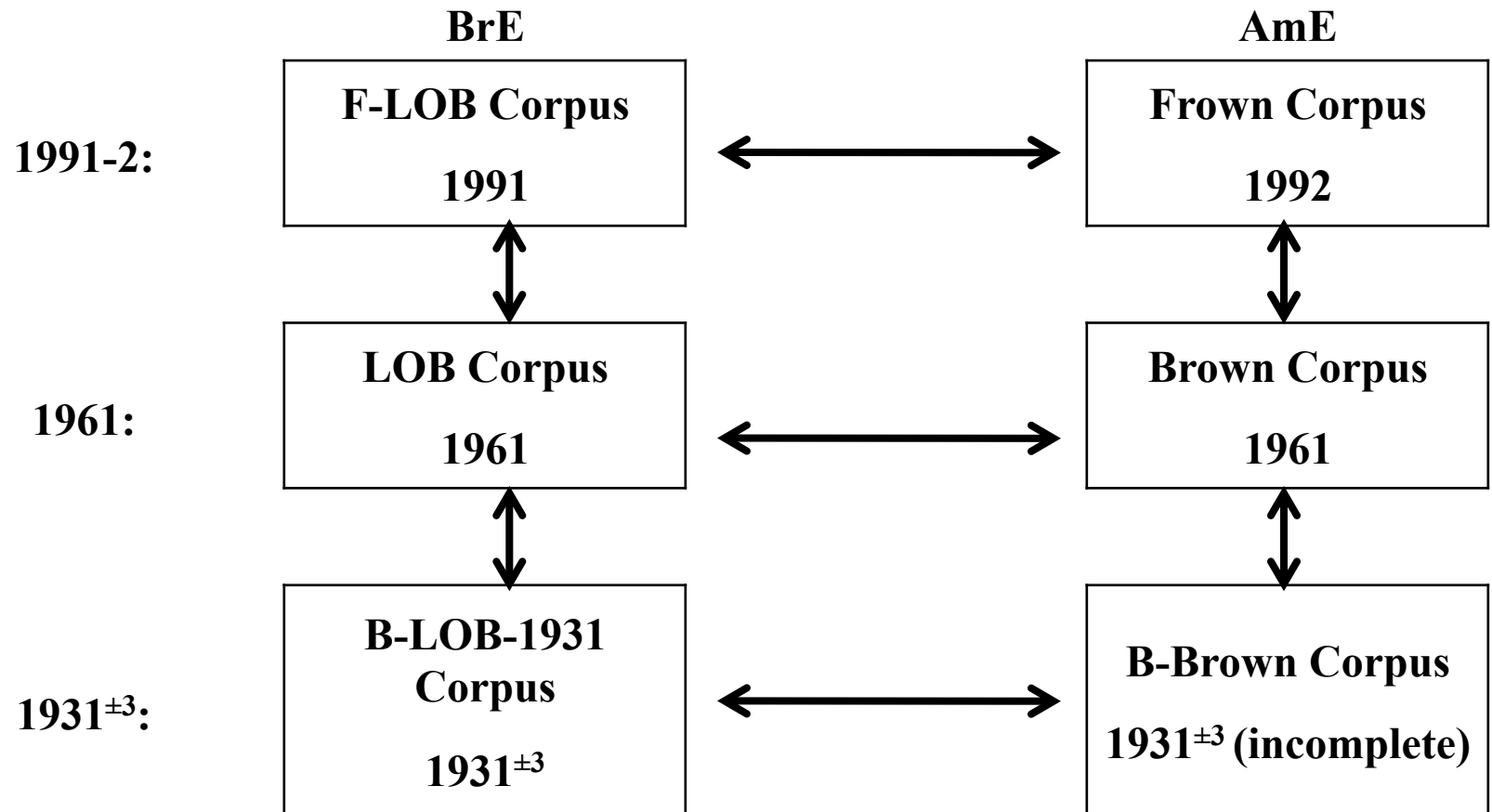


Fig. 1: The Brown-Family of corpora.

3. Data

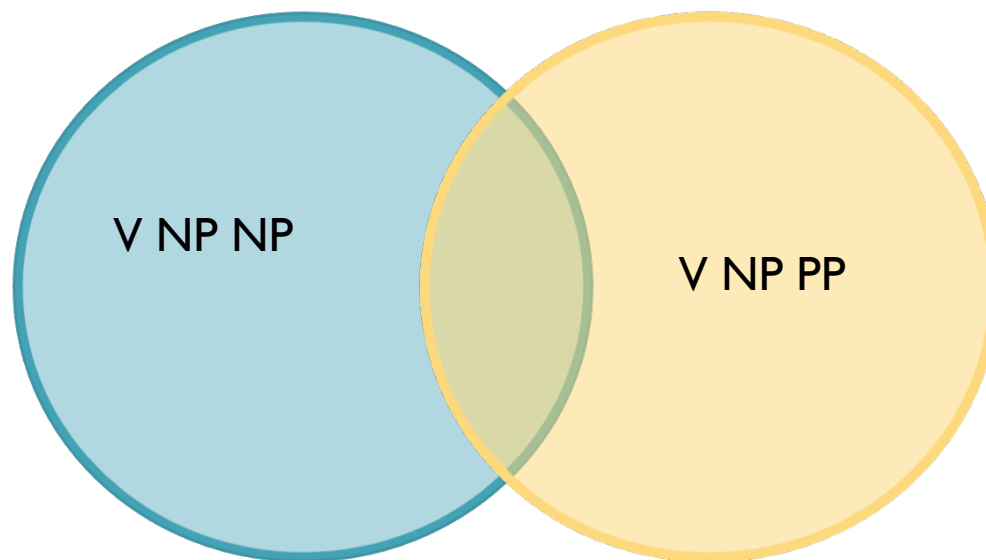
A	Press Reportage	44 text files
B	Press Editorial	27 text files
C	Press Reviews	17 text files
D	Religion	17 text files
E	Skills and Hobbies	36 text files
F	Popular Lore	48 text files
G	Belles Lettres, Memoirs	75 text files
H	Miscellaneous (Official Documents)	30 text files
J	Scientific Writing	80 text files
K	General Fiction	29 text files
L	Detective and Mystery Fiction	24 text files
M	Science Fiction	6 text files
N	Adventure and Western Fiction	29 text files
P	Romance and Love Story	29 text files
R	Humor	9 text files

4. Methodology

- Automatic extraction
 - Parser: Pro3Gres (Schneider 2008)
 - double-object construction: verb obj1 obj2
 - prepositional dative construction: verb obj1 pobj(with Prep 'to')
 - Developed Prolog script which was run over the parser output and extracted the relevant dative constructions

4. Methodology

- Manual filtering: Principles of exclusion
 - Envelope of variation



- Constructions with a *Theme* and a *Recipient*

4. Methodology

- Principles of exclusion
 - constructions with benefactives instead of recipients
 - (2) second son had a little bit of spunk, and his dear Mamma **made him a waster**. (BLOB, K18)
 - ...or locatives instead of recipients
 - (3) about **sending them home**? (BLOB, L14)

- ... with sentential postmodifications

- non-finite clauses:

- (4) Tell him why you are walking as this will **give him a chance to appraise your desirability** and that he may know that if he takes you he is doing a good turn to a fellow who deserves it. (BBrown, B08)
 - (5) But the legal judgment says that BA is liable to **pay him the going rate for goods damaged under the Warsaw Convention**, which regulates international air travel. (FLOB, A13)
 - (6) He was then able to **give ambulancemen his expert assessment of the cases needing the most urgent treatment**. (FLOB, A24)

- Relative clauses:

- (7) Our coach Alan Davis has **given us something which has been lacking**, self belief.. (FLOB, A33)

- fixed expressions

(8) The position is that, whereas this claim of objectivity is of extreme interest as evidence of Schiller's aesthetic consciousness and of his efforts to **bring it to terms with** his theoretical reflections, he does not in fact substantiate the claim in its more far-reaching implications. (LOB, J)

- To define whether a prepositional dative construction occurred in variation with a double object construction or not, the verb of the construction was compared against:
 - the parser's verb list of all verbs that could occur with two objects
 - verb list offered by Mukherjee (2005: 82) with verbs that were parsed as ditransitive in ICE-GB

(see Bresnan et al. 2007; Grimm and Bresnan 2009)

4. Methodology

- Annotation of syntactic weight
 - length of each constituents in graphemes
 - difference in length between constituents measured as log value (see Bresnan and Ford 2010: 174)
 - number of constructions where theme is longer than recipient or vice versa

				Blätter	Diagramme	SmartArt-Grafiken	WordArt		
◇	F	G	H	I	J	K	L	M	N
1									
	verb	Rec	Theme	LengthOfRec c	LengthOfTh eme	difference in length>log	Rec<Theme	Rec>Theme	Rec=Theme
2									
3									
4	give	her	a large juicy peach	3	19	1.23044892	1	0	0
5	send	him	the whole poem	3	14	1.07918125	1	0	0
6	give	him	some satisfaction	3	17	1.17609126	1	0	0
7	give	you	the addresses of places in Naples	3	33	1.49136169	1	0	0
8	show	you	things	3	6	0.60205999	1	0	0
9	give	him	a shot	3	6	0.60205999	1	0	0
10	give	me	a hot bath	2	10	0.95424251	1	0	0
11	give	Doris	a queer feeling inside	5	22	1.25527251	1	0	0
12	give	them	the eve	4	7	0.60205999	1	0	0

Fig. 2: Evaluation of the data – BBrown_KLMN_ditrans.xls

5. Results

- Newspaper [ABC]

TOTAL NUMBERS [ABC]

	American English			British English		
	double-object	to-NP	row total	double-object	to-NP	row total
1930	63	138	201	55	132	187
1960	50	123	173	55	122	177
1990	48	118	166	57	146	203
column total	161	379	540	167	400	567

Table 3: Total numbers of instances in Newspaper AmE

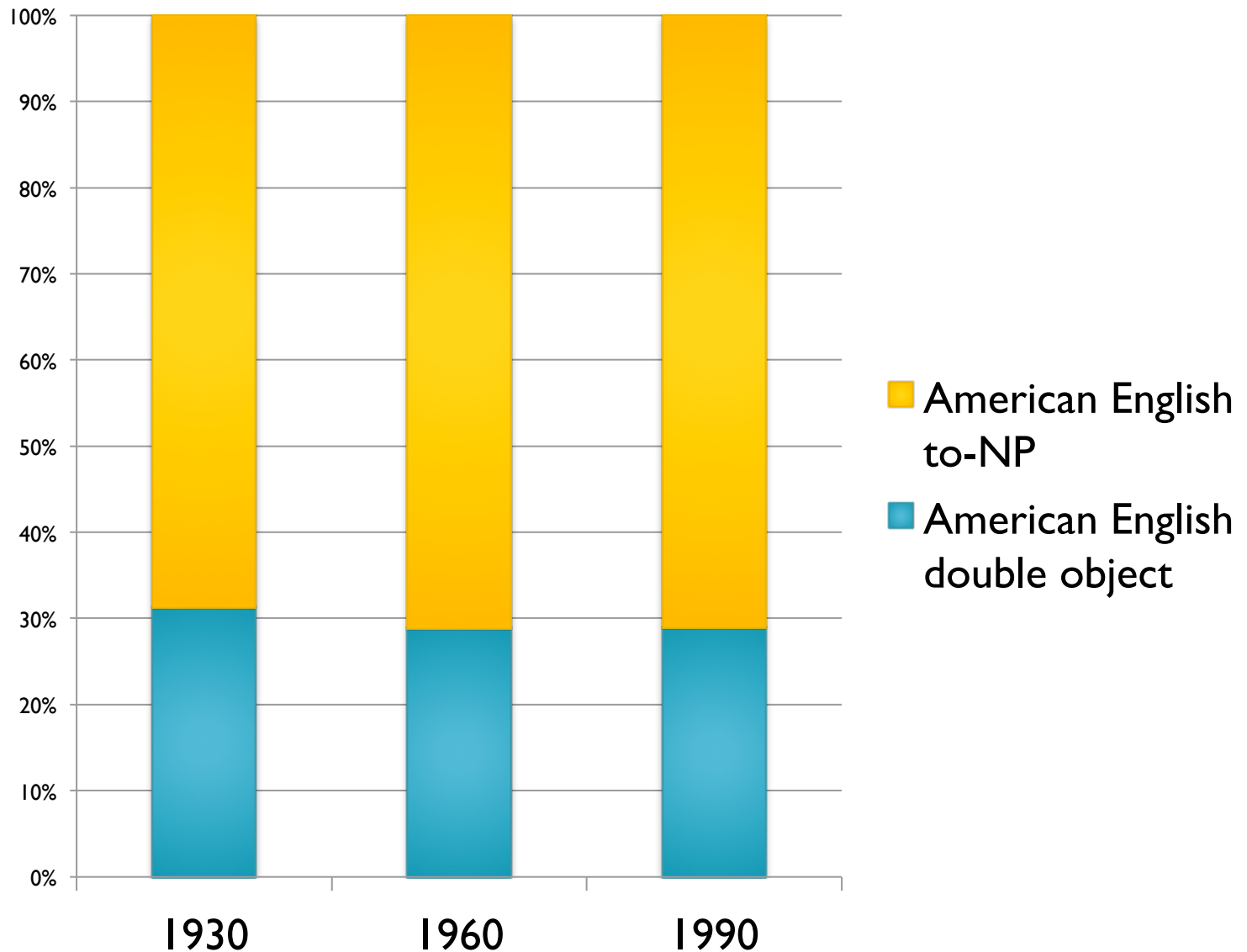


Fig. 2: Distribution of double-object and to-NP in Newspaper AmE in %

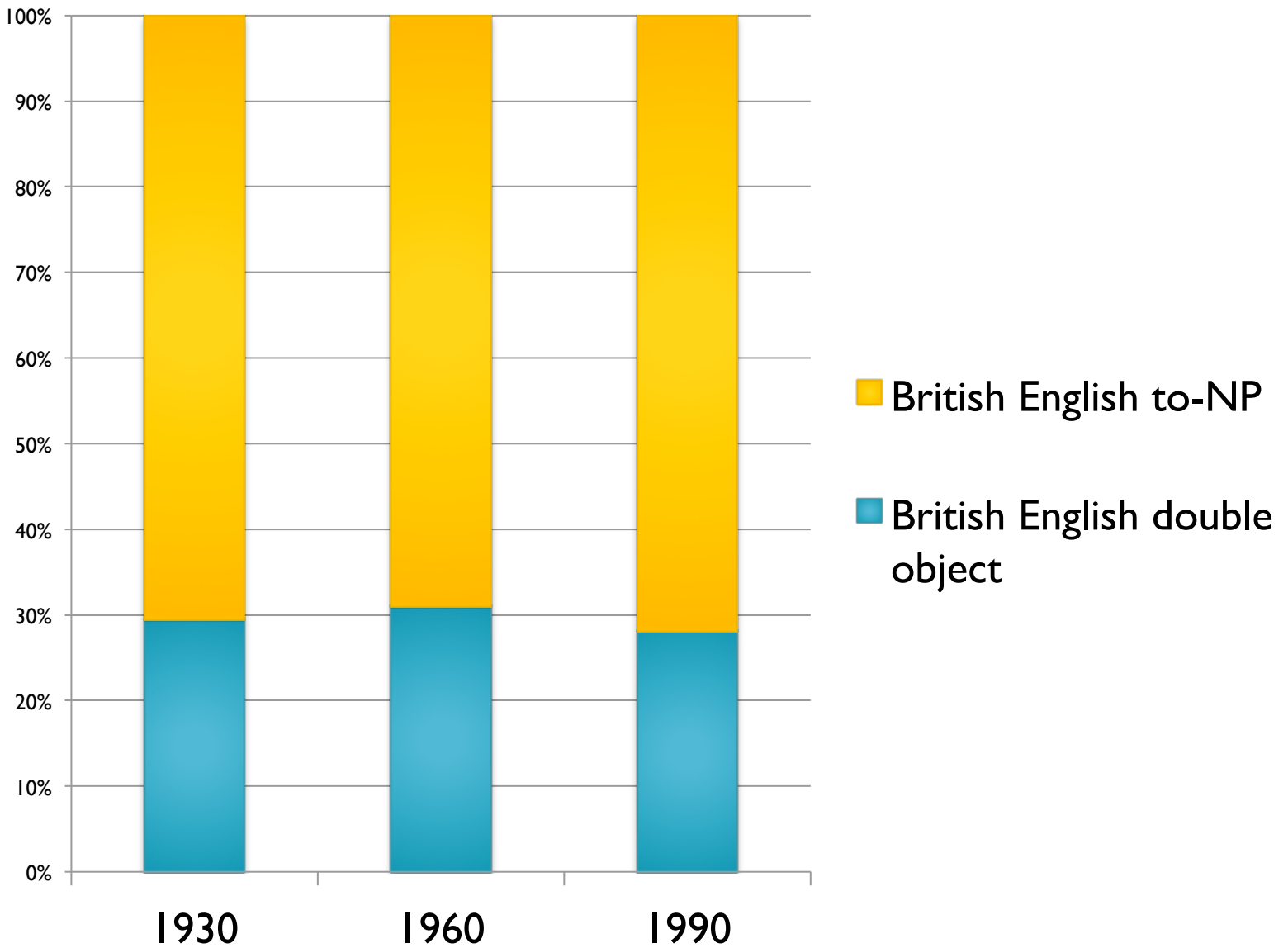


Fig. 3: Distribution of double-object and to-NP in Newspaper BrE in %

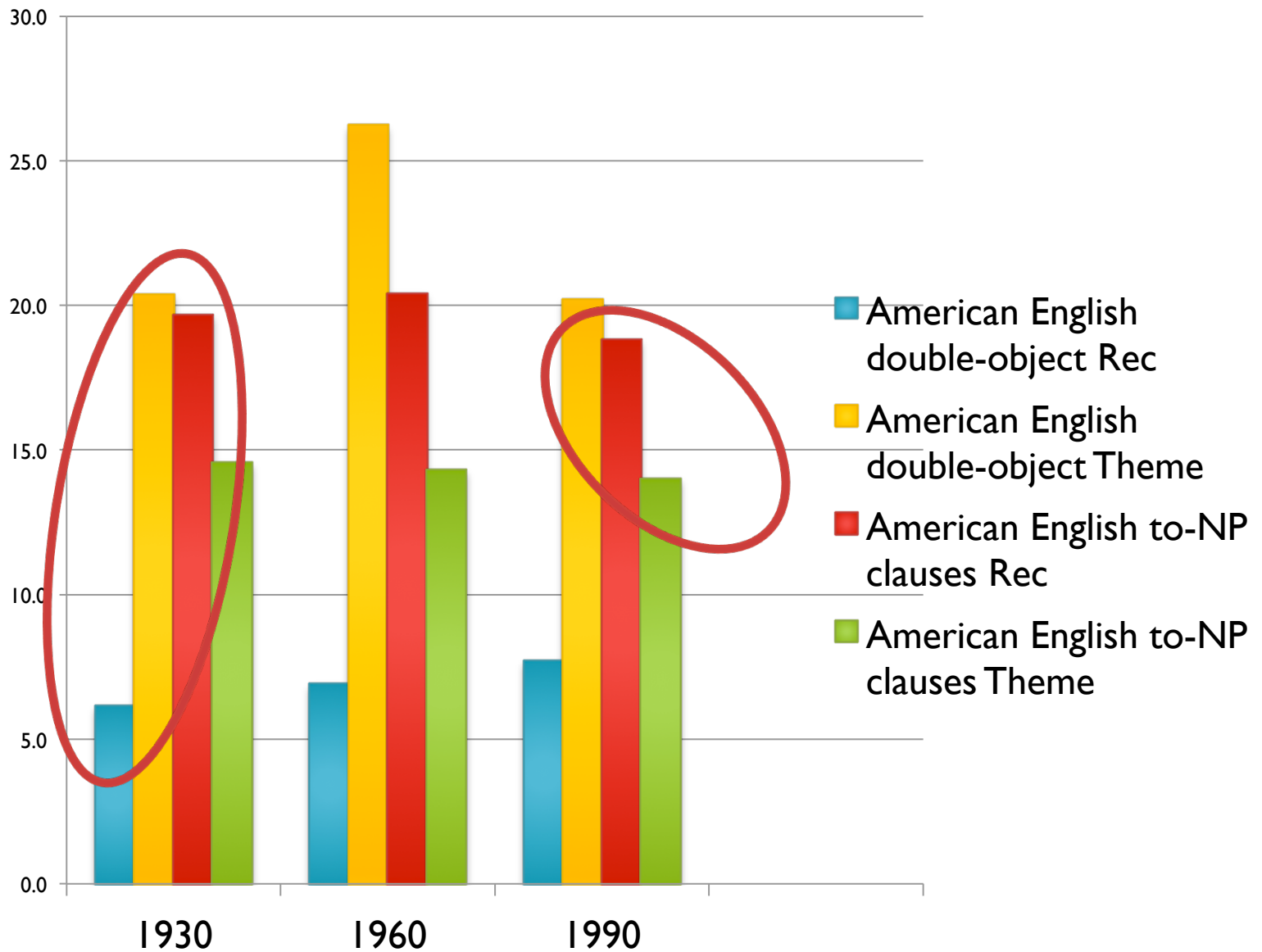


Fig. 4: Length of Recipient and Theme in AmE in #

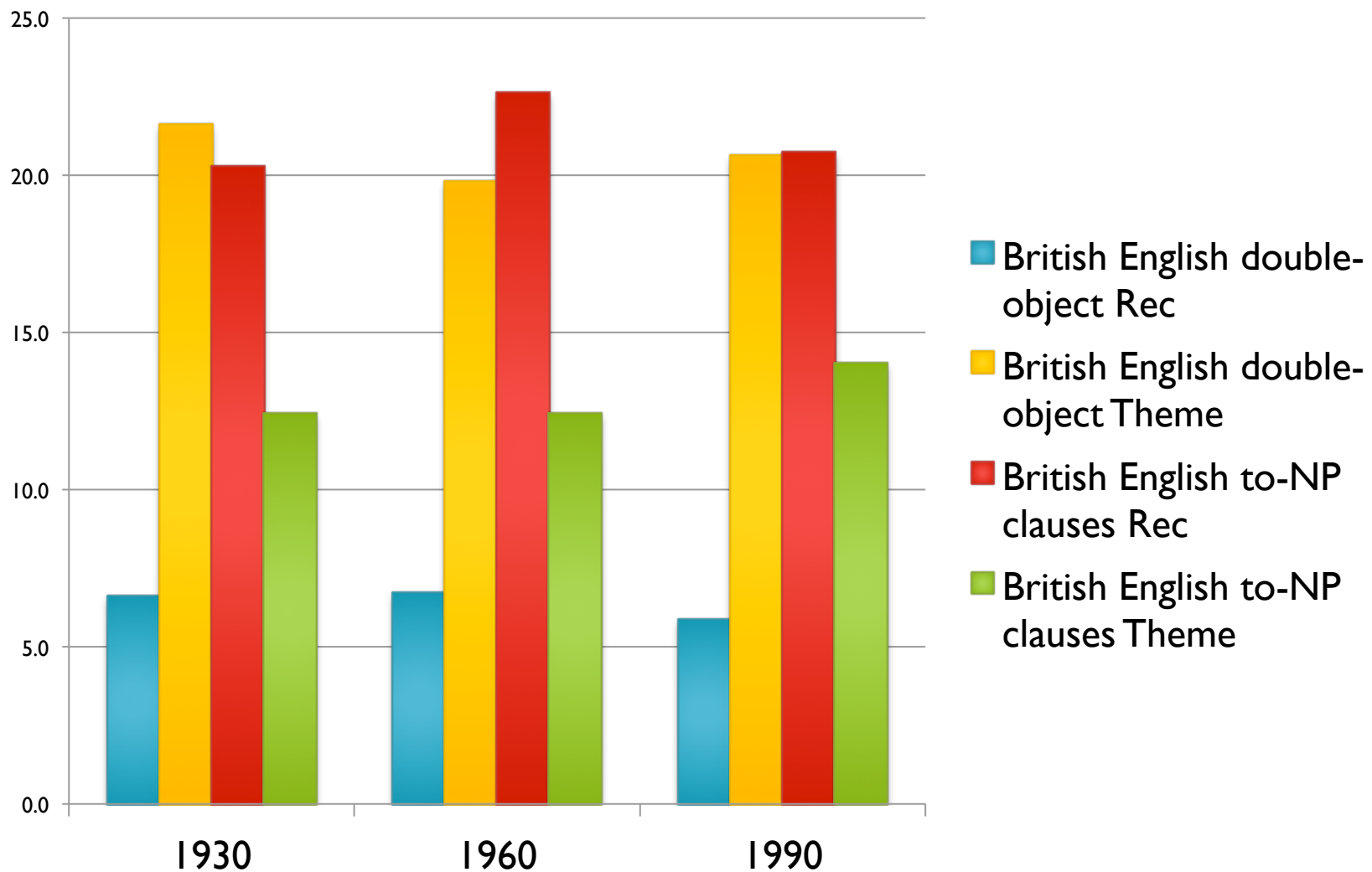


Fig. 5: Length of Recipient and Theme in BrE in #

LENGTH / log-value

	American English		British English	
	double object	to-NP	double object	to-NP
1930	0.96	0.33	0.98	0.48
1960	1.11	0.25	0.96	0.54
1990	0.81	0.18	0.96	0.25

Table 4: log-value of differences in length in Newspaper

5. Results

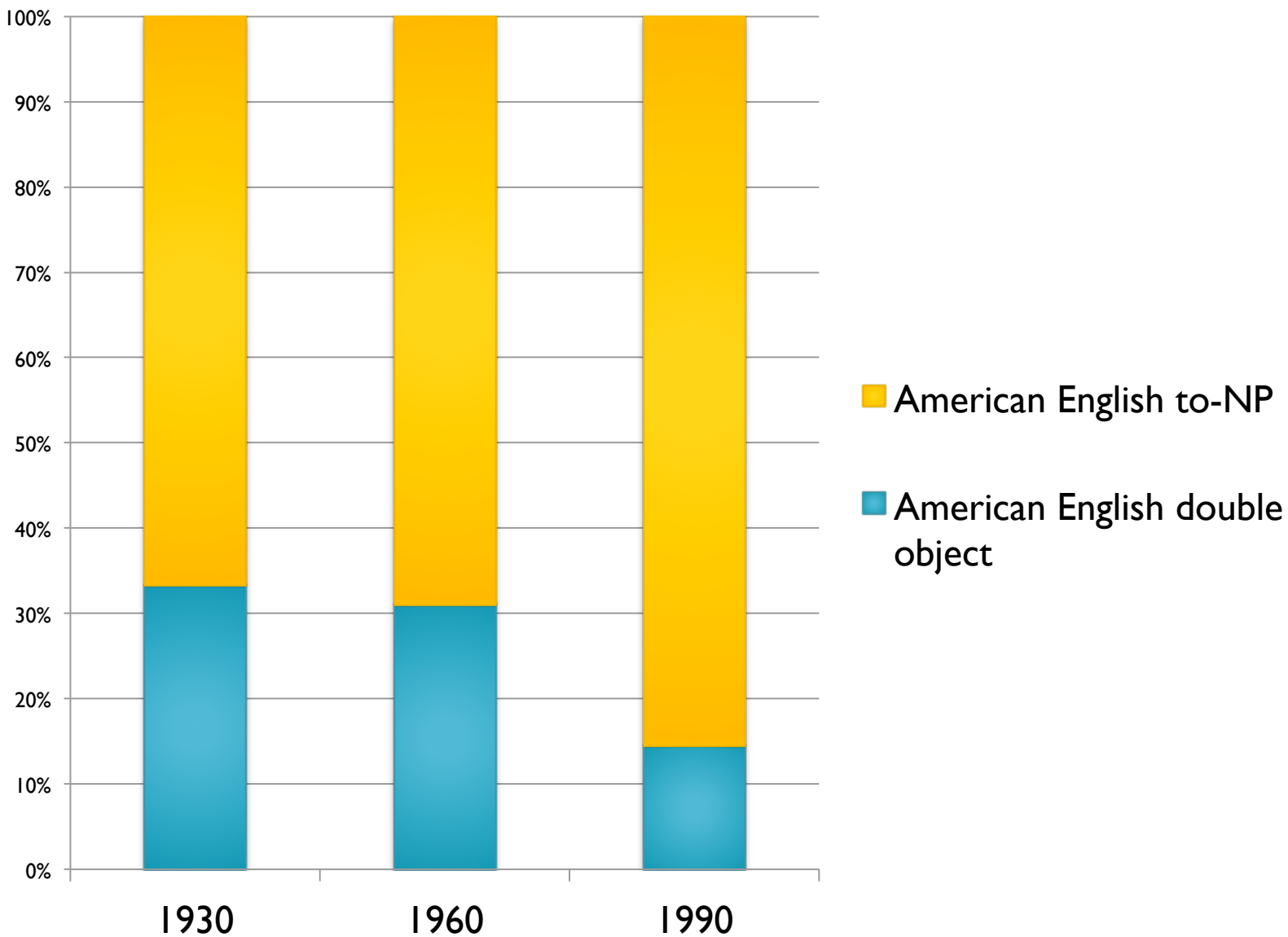
- no significant changes between AmE and BrE and 1930-1990
- AmE:
 - mean length of recipient in double object constructions increases (*I gave **Mary** the book*)
 - difference between the two constituents in to-NP decreases 1930-1990
- BrE:
 - mean length of recipient in double object constructions decreases
 - mean length of themes in to-NP constructions increases (*I gave **the book** to Mary*)
 - difference between the two constituents in to-NP decreases 1930-1990

- Scientific Writing [J]

TOTAL NUMBERS [J]

	American English			British English		
	double object	to-NP	row total	double object	to-NP	row total
1930	22	44	66	19	67	86
1960	18	40	58	15	45	60
1990	11	65	76	17	47	64
column total	51	149	200	51	159	210

Table 5: Total numbers of instances in Scientific Writing



→ Significant change at $p < 0.05$

Fig. 6: Distribution of double-object and to-NP in Science AmE in %

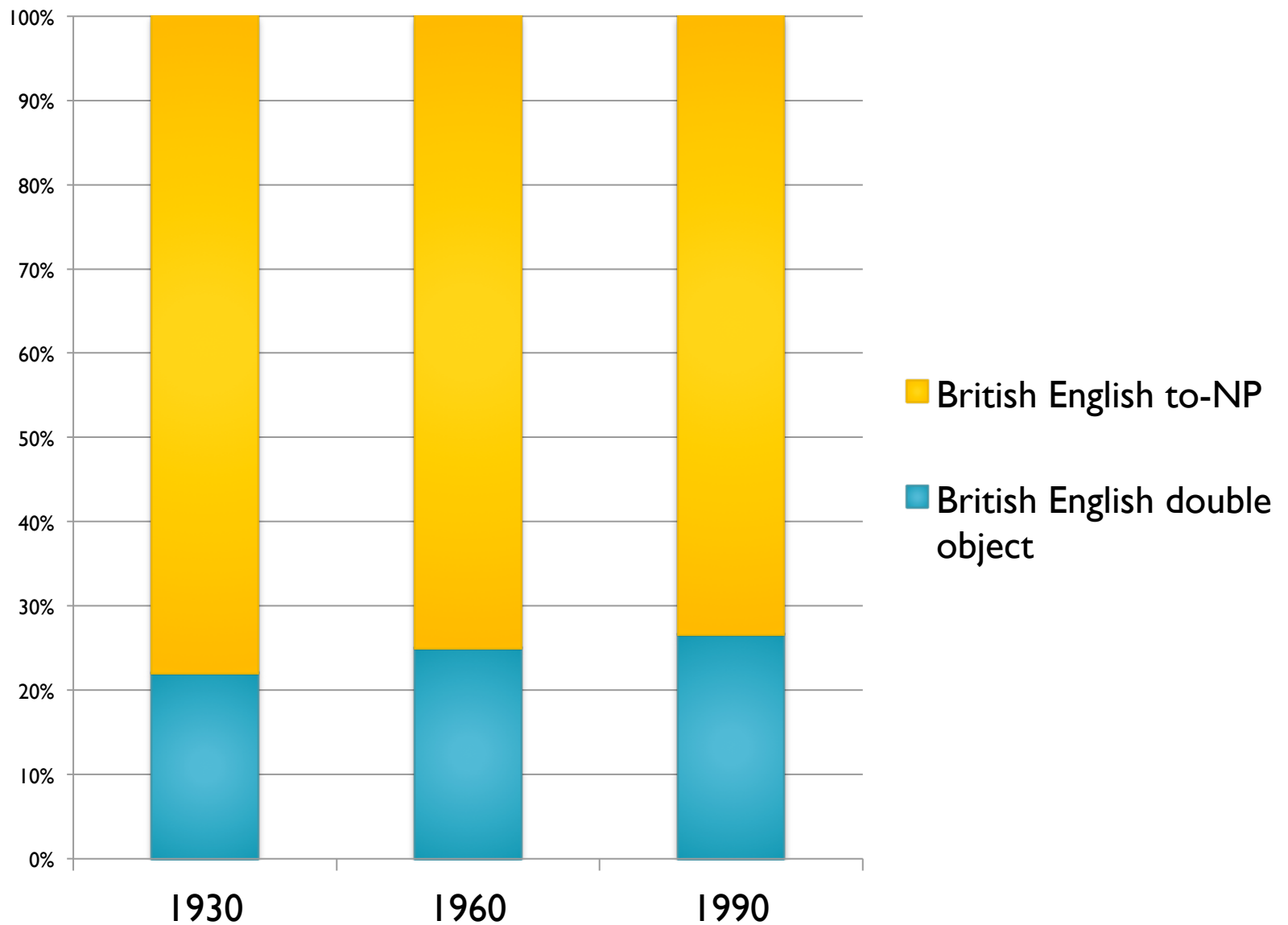


Fig. 7: Distribution of double-object and to-NP in Science BrE in %

	American English			
	double-object		to-NP clauses	
	Rec	Theme	Rec	Theme
1930	8.7	28.9	22.5	11.6
1960	5.2	34.2	21.8	10.8
1990	6.2	24.2	22.7	12.4

Table 6: mean length of constituents in Scientific Writing in AmE

LENGTH / log-value

	American English		British English	
	double object	to-NP	double object	to-NP
1930	1.25	0.63	1.44	0.67
1960	1.33	0.61	0.99	0.46
1990	1.19	0.60	1.07	0.38

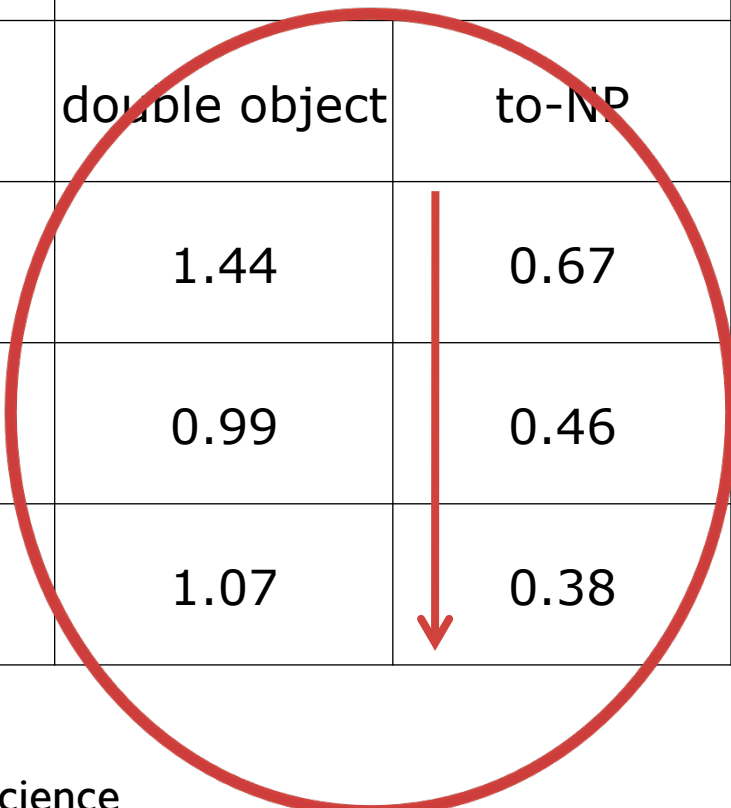


Table 7: log-value of differences in length in Science

5. Results

- significant changes between 1930 and 1990 in AmE, but not BrE (at $p < 0.05$)
- AmE:
 - decrease in length of recipient and theme in double object constructions
 - difference between constituents decreases in double object constructions
- BrE:
 - increase in length of recipient in double object constructions (*I gave **Mary** the book*)
 - decrease in length of theme in double object constructions
 - decrease in length of recipient in to-NP (*I gave the book **to Mary***)
 - difference between constituents decreases in double object constructions and to-NP

- Fiction [KLMN]

TOTAL NUMBERS [KLMN]

	American English			British English		
	double object	to-NP	row total	double object	to-NP	row total
1930	129	50	179	106	53	159
1960	120	44	164	104	58	162
1990	103	60	163	115	48	163
column total	352	154	506	325	159	484

Table 8: Total numbers of instances in Fiction.

→ significant change in AmE

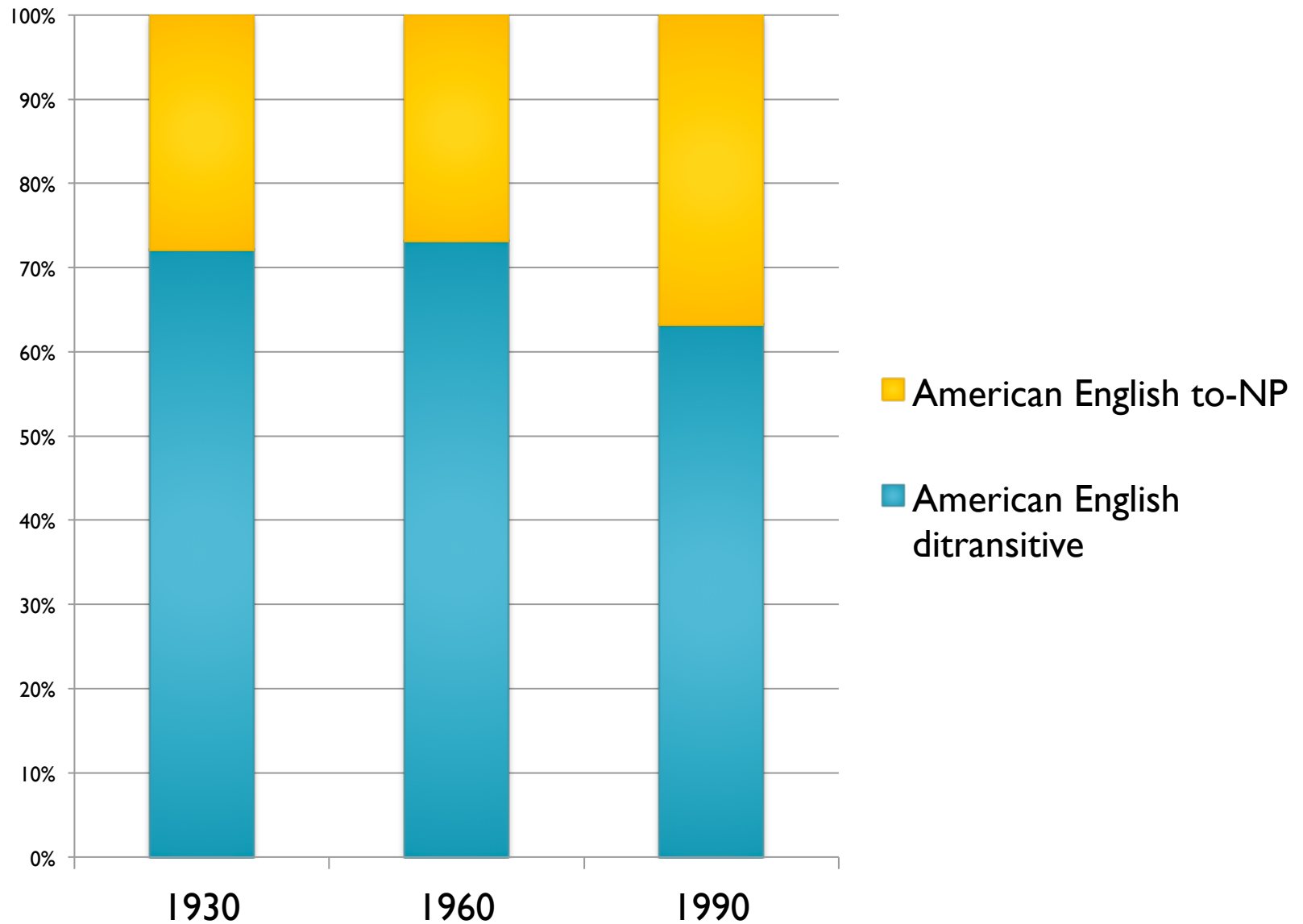


Fig. 8: Distribution of double-object and to-NP in Fiction in AmE in %

LENGTH / log-value

	American English		British English	
	double object	to-NP	double object	to-NP
1930	0.95	0.06	1.00	0.23
1960	0.90	-0.13	0.91	0.21
1990	0.97	0.24	1.00	0.41

Table 9: log-value of differences in length in Fiction

5. Results

- no significant changes in AmE and BrE between 1930 and 1990
- AmE
 - increase in mean length of recipient and theme in double object constructions
 - increase in mean length of recipient in to-NP constructions
 - difference between constituents increases in to-NP constructions
- BrE
 - decrease in mean length of theme in to-NP constructions
 - difference between constituents increases in to-NP constructions

- All [ABCJKLMN]

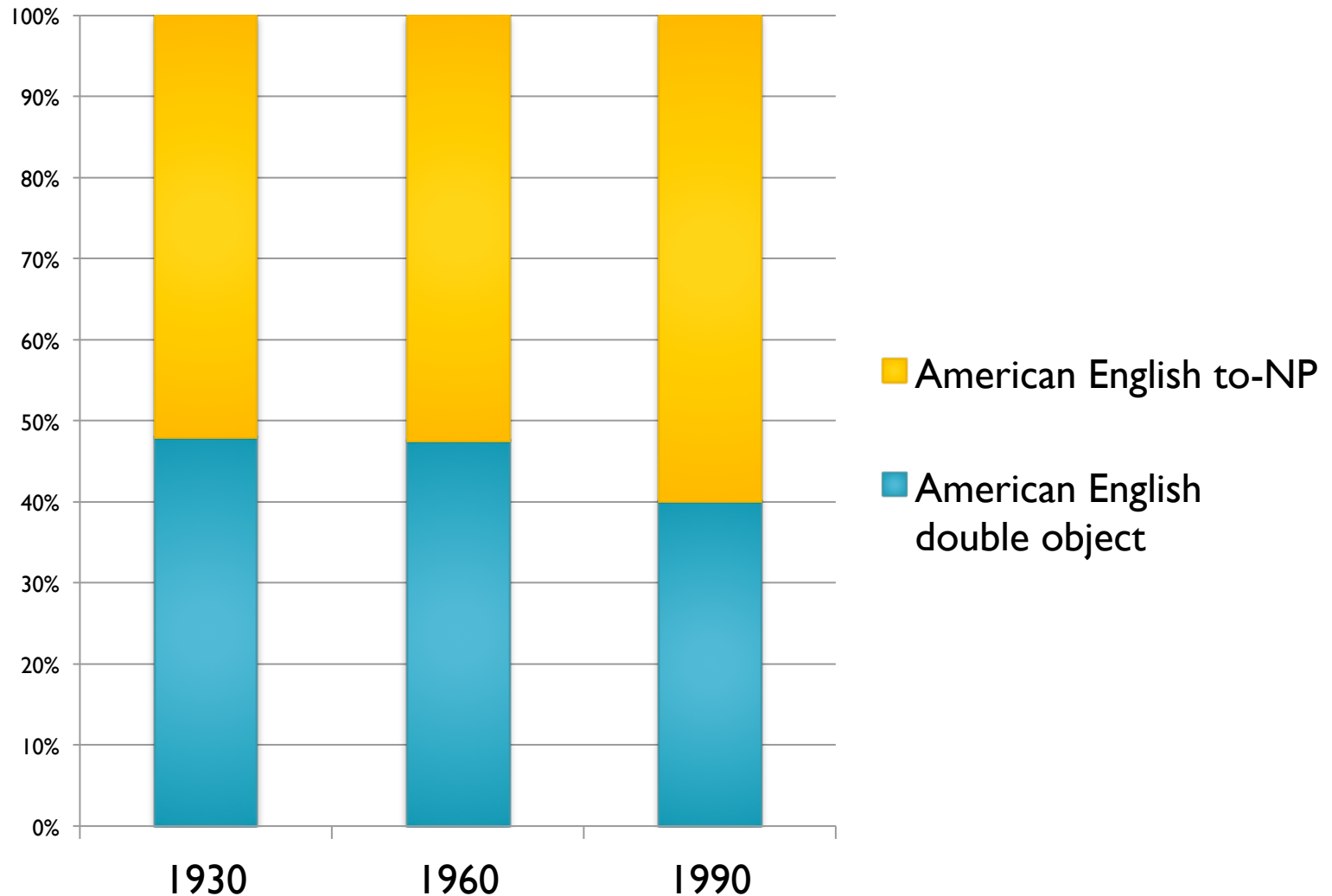


Fig. 9: Distribution of double-object and to-NP in AmE in %

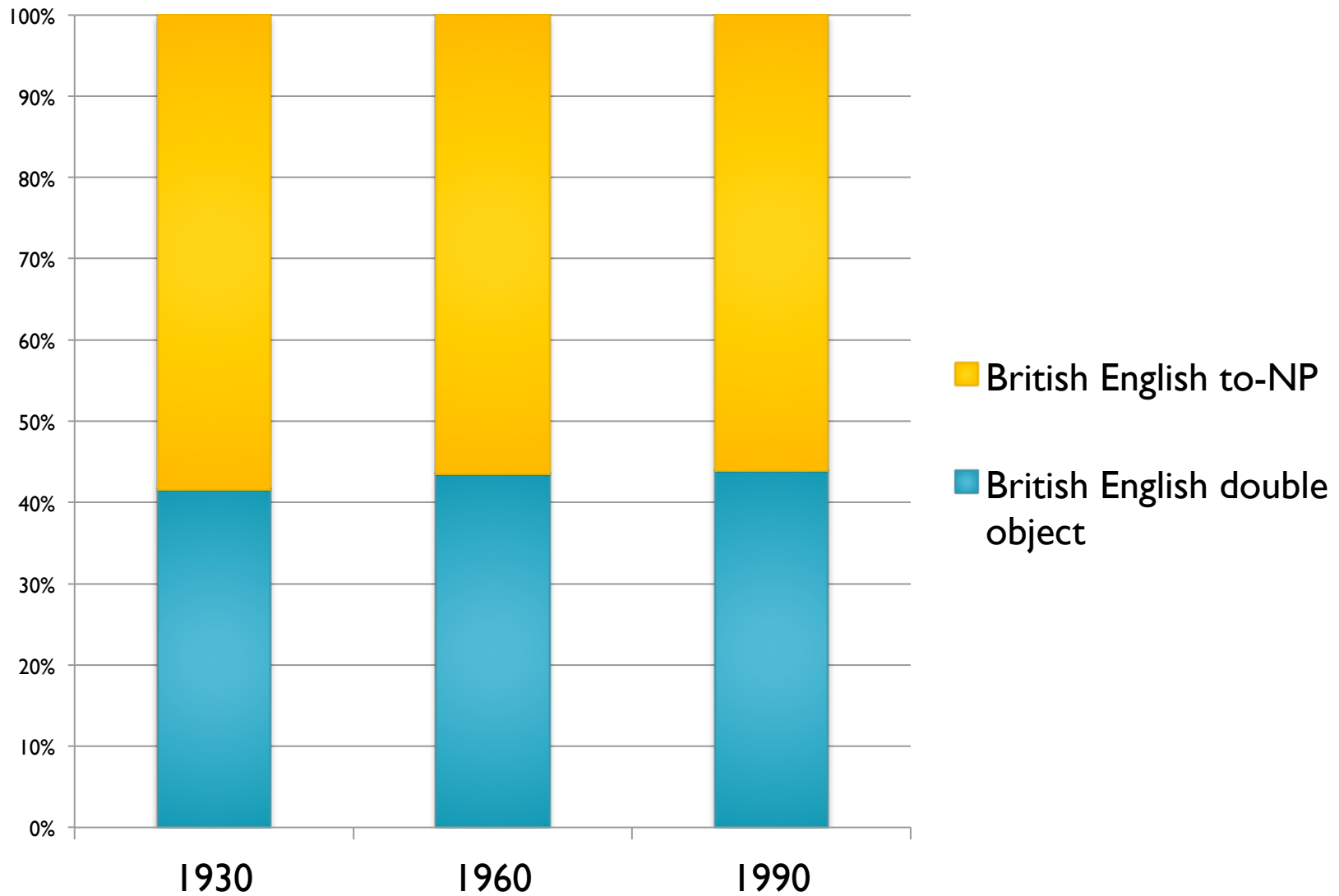


Fig. 10: Distribution of double-object and to-NP in BrE in %

LENGTH / log-value

	American English		British English	
	double object	to-NP	double object	to-NP
1930	1.05	0.34	1.14	0.46
1960	1.11	0.24	0.95	0.40
1990	0.99	0.34	1.01	0.35

Table 10: log-value of differences in length in all genres

5. Result

- Genre differences

- Scientific Writing is the only genre with significant changes in AmE
- the number of constructions where recipient is shorter than the theme in double object constructions (*I gave **Mary** the book*) is higher in Scientific Writing (always 100%) than in Press (around 88%) or Fiction (94%).
- Fiction shows far more double object constructions than the other two genres.
- In Scientific Writing, the difference in length between the two constituents is overall higher than in the other two genres:

	American English		British English	
	double object	to-NP	double object	to-NP
Newspaper	0.96	0.25	0.97	0.42
Science	1.26	0.61	1.17	0.50
Fiction	0.94	0.06	0.97	0.28

5. Results

- Historical differences
 - the mean length of the theme in double object constructions in BrE decreases
 - there are no significant changes overall (apart from Scientific Writing)

5. Results

- Variational differences
 - the difference in length between both constituents decreases in the prepositional dative construction in both AmE and BrE (in Newspaper), however, the difference always remains smaller in AmE than in BrE
 - this difference decreases also in Scientific Writing in the prepositional construction in BrE but not in AmE
 - the difference in length between both constituents in the prepositional dative construction (in Fiction) is smaller in AmE than in BrE (Table 9)

6. Conclusion and Outlook

- The results show that Scientific Writing is so far the only genre that shows statistically significant differences
 - while studies on genitive variation have shown that there is an increase in the length of last constituents, this does not hold true for the dative alternation
 - the decrease in the difference in length between the constituents, as found in newspaper writing, shows that the preposition 'to' carries enough meaning (semantically and syntactically) to divide the two constituents
 - this runs counter to the change found in Fiction, where the difference in length increases in the to-NP constructions
 - the similar decrease in difference in length in Scientific Writing for all constructions in both varieties is genre specific and may be explained with information density
- the number of constructions where recipient shorter or longer than theme stays in all instances roughly the same

6. Conclusion and Outlook

- difference in length generally decreases, not so in Fiction
- correlates with increase in number of nouns (especially noun+noun frequencies) 1960-1990 as found by Leech et al. (2009) in a study on the Brown/Frown/LOB/FLOB-Corpora
- the increase of noun+common noun sequence is highest in Press and Learned texts – correlating with findings of this study (decrease of difference in length)
- density of information packaging due to information explosion in recent years (technological advancement)

6. Conclusion and Outlook

- Next steps...

References

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THANK YOU!



- eg.

(I) The vulturelike attendance of the Pocket family upon Miss Havisham is summed up in the hypocritical gestures of Miss Camilla Pocket, who puts her hand to her throat in a feigned spasm of grief-stricken choking, then lays it "upon her heaving bosom" with "an unnatural fortitude of manner", (I I) and finally **kisses it to Miss Havisham** in a parody of the lady's own mannerism toward Estella. (Brown, J68)

5. Evaluation

	Precision	Recall
obj2	90%	56.3%
PP-attachment (pobj, etc.)	76.9%	68.6%

Table 2: Evaluation of the parser.